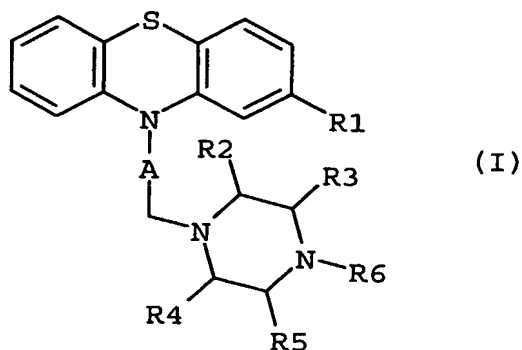


## Claims.

1. Use of piperazine phenothiazine derivatives, or a pharmaceutically acceptable salt or ester thereof, in the manufacture of a medicament with neuroprotector and/or neurotrophic effects on CNS and/or PNS.

2. Use according to claim 1 wherein the piperazine phenothiazine derivatives are selected from compounds of formula I



wherein

A represents a straight or branched alkylene chain of from 2 to 6 carbon atoms separating the nitrogen atoms linked thereto by at least two carbon atoms ;

R1 represents hydrogen, halogen, lower alkyl, lower alkoxy, lower alkanoyl, lower alkyl-mercapto, trifluoromethylmercapto, lower alkyl-sulfonyl (preferably methylsulfonyl), perfluoro-alkyl of 1 to 3 carbon atoms;

R2, R3, R4 and R5 each represent methyl, ethyl or hydrogen, R6 represents hydrogen, lower alkyl, hydroxy-lower-alkyl or aliphatic acyloxy-lower-alkyl having 1 to 4 carbon atoms in the acyloxy portion and 1 to 6 carbon atoms in the alkyl portion, CH<sub>2</sub>-CH<sub>2</sub>-O-R7 where R7 represents hydrogen, COR8 where

R8 is a branched or straight chain alkyl radical of from seven to fourteen carbon atoms;

in the manufacture of a medicament with neuroprotector and/or neurotrophic effects on CNS and/or PNS.

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3. Use according to claim 2 wherein

A represents ethylene, propylene or 2- methylpropylene;

R1 represents hydrogen, chloro,  $\text{COCH}_3$ ,  $-\text{CF}_3$ ;

R2, R3, R4 and R5 each represent hydrogen;

10 R6 represents  $\text{CH}_3$ ,  $\text{CH}_2\text{-CH}_2\text{-O-R7}$  where R7 represents hydrogen, COR8 where R8 is a straight chain alkyl radical of from seven to fourteen carbon atoms.

15 4. Use according to claims 1 to 3, wherein the piperazine phenothiazine derivatives is flufenazine, or a pharmaceutically acceptable salt or ester thereof, in the manufacture of a medicament with neuroprotector and/or neurotrophic effects on CNS and/or PNS.

20 5. Use according to claims 1 to 4, in the manufacture of a medicament for the treatment of central and/or peripheral neurodegenerative diseases.

25 6. Use according to claims 1 to 5, in the manufacture of a medicament for the treatment of Parkinson's disease.

7. Use according to claims 1 to 5, in the manufacture of a medicament for the treatment of Alzheimer's disease.

30 8. Use according to claims 1 to 5, in the manufacture of a medicament for the treatment of peripheral neuropathy diseases.

9. Use according to claim 8, in the manufacture of a medicament for the treatment of amyotrophic lateral sclerosis (ALS) diseases.

5 10. Use according to any one of claims 1 to 9, wherein the medicament is for oral, rectal, subcutaneous, intramuscular or intravascular administration route.

10 11. Use according to any one of claims 1 to 10, wherein the medicament comprises as active ingredient from 0,2mg to 500mg of the piperazine phenothiazine derivatives.

15 12. Use according to any one of claims 1 to 11, wherein the medicament is administrated at doses comprised between 0.1mg/kg to 10mg/kg.